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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,910	08/22/2003	Tomoya Imazu	023971-0300	8555

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FOLEY AND LARDNER  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER
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LOUIS JACQUES, JACQUES H

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/645,910

Applicant(s)

IMAZU, TOMOYA

Examiner

Jacques H Louis-Jacques

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,6-9,19 and 20 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 10-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/22/03, 12/02/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

### ***Information Disclosure Statement***

2. Item A2, "10/455,846", in the information disclosure statement (IDS) filed on August 22, 2003, has not been considered because it is improperly submitted. The application serial number "10/455,846" does not correspond to the named inventor "Yamaguchi et al".

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 4 and 5 recite the limitation "the actual plant" in line 7 and lines 5-6, respectively. There is insufficient antecedent basis for this limitation in these claims.

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Claim 1, which both claims 4 and 5 depend from, does not recite an "actual plant". The "actual plant" is recited in claim 2. Therefore, in order to provide proper antecedent basis for the "actual plant" in these claims, claims 4 and 5 should depend on claim 2.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 6-9 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamauchi et al [6,887,175] in view of Fujikawa [6,840,341].

Yamauchi et al discloses a hybrid transmission for a hybrid vehicle comprising a two-degree-of-freedom differential mechanism. According to Yamauchi et al, the hybrid vehicle comprises a main power source (e.g., engine 3), a plurality of auxiliary (two) power sources (e.g., motors MG1 and MG2), and a planetary gear mechanism (e.g., planetary gearset 2) to modify a gear ratio when an output of the main power source is transmitted to a drive output member. See, for example, figures 1A, 2, 4A. Yamauchi et al discloses that the main power source is an engine (3), the plurality of auxiliary power sources are two motors (MG1, MG2), and the planetary gear mechanism is set to modify the gear ratio when the output of the main power source is transmitted to the drive output

member is a four-element, two-degrees-of-freedom planetary gear mechanism expressed in a lever diagram in which the engine and the drive output member are interposed between the two motors. See column 8. In addition, according to Yamauchi et al, the main power source is an engine (3), the plurality of auxiliary power sources are a coaxial multi-layer motor having one stator and two rotors, and the planetary gear mechanism is set to modify the gear ratio when the output of the main power source of the engine is transmitted to the drive output member is a Ravigneaux compound planetary gear train expressed in the lever diagram in which the engine and drive output member are interposed between the two motors constituting the coaxial multi-layer motor. See columns 3 and 4. Still, according to Yamauchi et al, power sources whose torque controls are enabled to be provide greater power are selected to control the hybrid transmission (vehicle) in order to improve the power transmission efficiency of the hybrid (vehicle) transmission. However, Yamauchi et al does not particularly teach suppressing vibration of the hybrid vehicle based on the selected power sources. Fujikawa, on the other hand, discloses a parallel hybrid vehicle having a controlling section for controlling or suppressing the vibration of the hybrid vehicle based on engine and motor torques. According to Fujikawa, the hybrid vehicle comprises an engine (8), a motor/generator (2) and a vibration suppression control section for superposes a vibration control signal onto each of torque commands supplied to the selected two power sources to suppress two-degrees-of-freedom vibrations of the planetary gear mechanism (3). See figure 1, columns 1- 2 and 13. Thus, it would have been obvious to one skilled in the art to use the vibration control of Fujikawa to control the hybrid vehicle of Yamauchi et al because

such modification would provide a system that would compensate for torsional vibration of the vehicle due to changes in engine and motor torques, thereby preventing stalling of the engine while improving the power transmission efficiency of the hybrid (vehicle) transmission.

***Allowable Subject Matter***

8. Claims 2-3, 10-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 4 and 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The prior art do not particularly teach a vibration suppression apparatus for a hybrid vehicle, wherein the planetary gear mechanism is set to be an actual plant and a dynamic model on the vibrations of the planetary gear mechanism is set to be a plant model and the vibration suppression control section inversely calculates an external disturbance torque that causes the vibrations to be developed in the planetary gear mechanism using an inverse model of the plant model and additively supplies correction torques which cancel at least a part of the two-degrees-of-freedom vibrations of the actual plant to two power sources from among the power sources coupled to the respective elements of the actual plant.

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*Conclusion*

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6,244,368	Ando et al	Jun. 2001
6,300,735	Stemler	Oct. 2001
6,441,506	Nakashima	Aug. 2002
6,592,484	Tsai et al	Jul. 2003
6,806,667	Sasaki et al	Oct. 2004
US 2002/0190683	Karikomi et al	Dec. 2002
US 2003/0069104	Nakano et al	Apr. 2003
US 2003/0173934	Arimitsu	Sep. 2003
US 2004/0012206	Wakashiro et al	Jan. 2004
US 2004/0112654	Kozarekar et al	Jun. 2004

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques H Louis-Jacques whose telephone number is 571-272-6962. The examiner can normally be reached on M-Th 5:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jacques H Louis-Jacques  
Primary Examiner  
Art Unit 3661

/jlj

  
JACQUES H. LOUIS-JACQUES  
PRIMARY EXAMINER